

The Total Economic Impact™ Of IBM Garage Value Orchestration Services

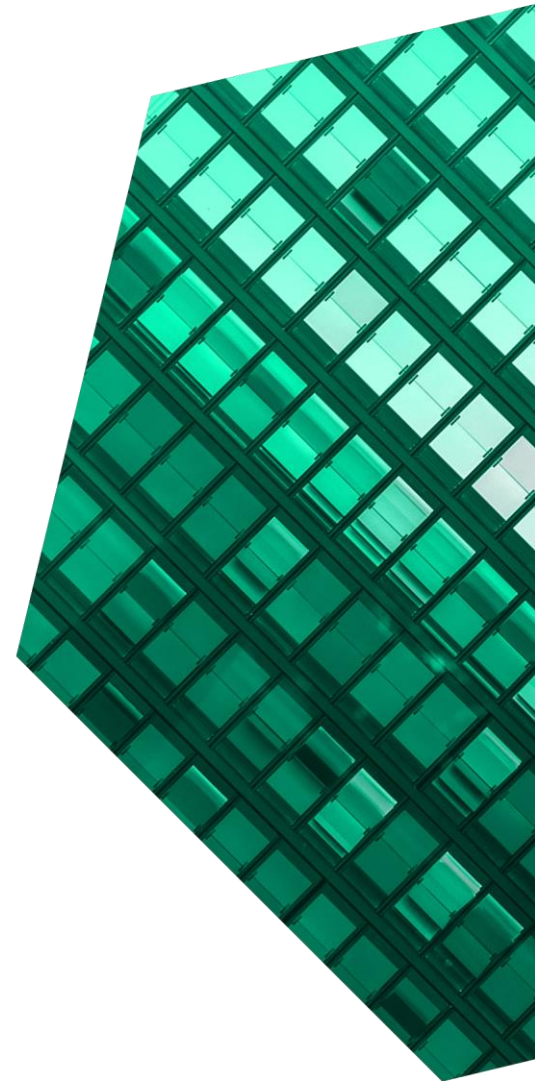
Cost Savings And Accelerated Growth
Enabled By IBM Garage As Experienced By A
Manufacturer And Retailer

JUNE 2023

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ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key transformation outcomes. Fueled by our customer-obsessed research, Forrester’s seasoned consultants partner with leaders to execute on their priorities using a unique engagement model that tailors to diverse needs and ensures lasting impact. For more information, visit forrester.com/consulting.

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Executive Summary

IBM Garage replaces traditional waterfall problem-solving methodologies, offering an agile, adaptive approach that enables clients to achieve value orchestration benefits built on three tenets: value discovery, value prioritization, and value realization.¹ The prescriptive methodology also limits organizational risk inherent in the digital transformation process, helping co-innovation partners meet today's demands for scale and innovation and prepare for future technologies, such as generative AI.

[IBM Garage](#) offers an innovative, iterative consulting product that helps organizations abandon the traditional, siloed waterfall approach to business-critical problem solving and adopt a modern, digital, and agile methodology to promote cross-functional, end-to-end, and incremental refinement, value orchestration, and reduced organizational risk.

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by engaging IBM Garage.² The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Garage on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five representatives with experience using IBM Garage services. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single [composite](#)

Developer and data architect efficiencies gained by Year 3

20%



KEY STATISTICS



Return on investment (ROI)

108%



Net present value (NPV)

\$8.45M

[organization](#). The composite organization is a North American manufacturer and retailer of home furnishings with 35,000 employees, an annual revenue of \$8 billion, and two parallel Garage engagements focusing on the ability to predict customer demand and automate internal and customer-facing workstreams. Forrester assumes the duration of the engagements is three years. This is a specific scenario but one that highlights the benefits and outcomes often found in transformation projects.

Prior to engaging IBM Garage, the interviewees noted that their organizations suffered inefficient, manual workflows in an on-premises environment. With siloed customer data and the lack of expertise, bandwidth, visibility, and adaptive digital processes, problem-solving was linear and inflexible with inherent risk that often led to costly, mediocre results.

After the investment in IBM Garage, the interviewees reported that the Garage methodology measured incremental success and allowed for real-time

pivoting when midstream metrics proved inadequate. The digital transformations led by Garage teams automated cross-organizational workflows, reduced physical footprints, scaled operations, and improved and consolidated customer data collection. The interviewees' organizations gained reliable insights, realized growth in market share, and reduced customer acquisition costs (CAC).

KEY FINDINGS

Quantified benefits. Three-year, risk-adjusted present value (PV) quantified benefits for the composite organization include:

- **Achieved efficiencies of 10% to 20% across teams due to automation and derisking strategies.** Transitioning from a manual, risk-fraught on-premises environment to a digitalized, centralized, and secure ecosystem results in AI-applied workflow efficiencies for customer-facing call agents, application developers and data architects, and internal audit and compliance specialists. The efficiency gains are worth \$8.1 million over three years to the composite organization.
- **Lowered CAC of 3% due to value orchestration and improved customer data management.** With centralized, reliable customer data enabling improved analytics and accessibility to consumer market insights, the composite organization enhances its campaigns through better audience targeting, experiences higher customer acquisition rates, and reduces its CAC. The value of reduced customer acquisition costs totals \$4.6 million over three years.
- **Reduced footprint by 6% in infrastructure, lowering capex and opex through application modernization and hybrid cloud optimization.** Armed with automated analytics, the composite organization better predicts customer behavior and improves product turnover metrics. This allows it to decommission fulfillment centers and

dynamically commission store space for those fulfillment activities. Additionally, the Garage-led digital transformation allows the composite organization to consolidate data centers and other legacy costs. The optimized footprint results in cost savings of \$1.9 million over three years.

- **Growth in market share of due to enhanced analytics and customer insights.** With better access to centralized customer data, the composite organization improves seasonally driven product stocking metrics across outlets. Additionally, with an improved data structure, the composite organization is ready for AI-enhancement, which can further improve the ability to meet existing demand and project future demand. This improved architecture leads to a just-in-time inventory approach, improved time to market, and a growth in vertical market share equaling nearly \$1.7 million over three years.

Unquantified benefits. Benefits that provide value for the composite organization but are not quantified in this study include:

- **Enhanced employee innovation through collaboration and improved data access.** Through digital modernization and the latest data-driven technologies, employees realize greater efficiencies, learn higher-value skills, and eliminate silos. The shift in culture spurs innovation and empowers teams to collaborate and participate in the composite organization's business decision-making, leading to better business outcomes.
- **Improved customer experience due to speed, visibility, and collected market insights.** Enabled with insights and analytic capabilities, the composite organization identifies the products most appealing to its customer base more easily. The ability to predict seasonal demand for inventory items and quickly adjust product price

points enhances the overall customer experience while improving inventory management and sales revenue.

- **Increased brand recognition and accessibility.** With improved data and segmentation capabilities, the composite organization targets potential customers better to strengthen its brand recognition and promote brand accessibility.
- **Reduced latency on customer-facing applications due to modernization and intelligent workflows.** As a result of the Garage engagement focusing on automating workflows, the composite organization migrates customer-facing applications sitting on legacy technology to a cloud environment, thereby resolving ongoing customer complaints surrounding slow-loading applications and technologies. This innovative solution reduces latency on slow technologies by up to 50%, eliminating friction points with customers.

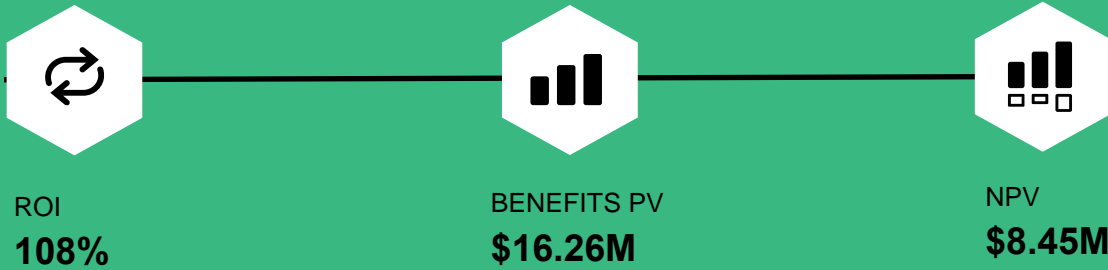
Costs. Three-year, risk-adjusted PV costs for the composite organization include:

- **Engagement fees to IBM and cost of transformation-related technologies.** The composite onboards the IBM Garage teams for three years, costing the organization a total of \$5.7 million in consulting fees and transformation-related technologies.
- **Internal resources required for engagements.** The three-year engagements require 12 cross-functional FTEs at 40% dedicated time for the duration of the projects. The cost of internal resources required for these engagements totals \$2.1 million over three years.

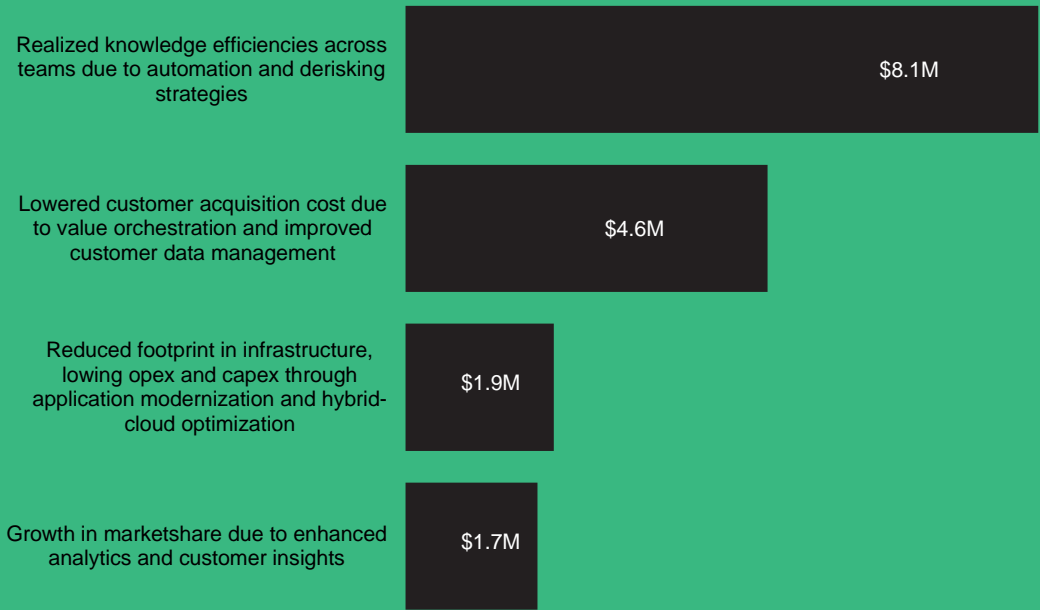
The representative interviews and financial analysis found that a composite organization experiences benefits of \$16.26 million over three years versus costs of \$7.81 million, adding up to a net present value (NPV) of \$8.45 million and an ROI of 108%.

Reduced latency on customer-facing applications:

Up to 50%



Benefits (Three-Year)



“IBM Garage delivered. The Garage team was able to take corrective measures when needed and scale up or scale down — fast. They are a trusted partner, so much more than a traditional supplier.”

— Product team lead, home furnishings retailer

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in IBM Garage.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that IBM Garage can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the study to determine the appropriateness of an investment in IBM Garage.

IBM reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

IBM provided the customer names for the interviews but did not participate in the interviews.



DUE DILIGENCE

Interviewed IBM stakeholders and Forrester analysts to gather data relative to IBM Garage.



INTERVIEWS

Interviewed five representatives at organizations using IBM Garage to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewees.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The IBM Garage Customer Journey

■ Drivers leading to the IBM Garage investment

Interviews			
Role	Industry	Region	Annual Revenue
Marketing leader	Home furnishings retail	Europe	\$45 billion
Product lead	Home furnishings retail manufacturer	Europe HQ, global operations	\$40+ billion
Accelerator manager	Energy	APAC HQ, presence in North America	\$4.7 billion
VP, cloud architecture	Financial services retail	North America	\$7 billion
Planning engineer	Telecom retail	North America	\$4 billion

KEY CHALLENGES

Forrester's interviews with five IBM Garage client decision-makers identified common challenges that led to engaging IBM Garage, including:

- **Manual, inefficient, and costly workflows due to outdated legacy technology.** Technology-, security-, and customer-focused teams experienced inefficiencies in their day-to-day due to their organizations' nondigitized, legacy technologies and leadership's go-to, traditional approach to solving critical business problems. Supporting a rigid waterfall methodology rather than a process incorporating digital transformation and value orchestration measures resulted in costly redundancies across the interviewees' organizations, limiting teams' ability to perform higher-value tasks.
- **Fragmented, siloed customer data.** Lacking a single source of truth and the ability to apply AI technologies, simple marketing and customer data-related tasks were time-consuming and required several now unnecessary steps to complete. A VP of cloud architecture in the financial services industry reported that migrating data from one source to another was done 100% manually and required an exorbitant amount of time in their organization's previous environment.

“There was a strong desire to try a new approach to [solving] big business problems because the existing ones weren't working. That's where IBM Garage came in.”

Accelerator manager, energy

- **Lack of developer and IT expertise and bandwidth.** Adaptive innovation is difficult without the proper tools. For the interviewees' organizations, a lack of internal expertise and bandwidth reinforced the status quo when it came to business-critical problem solving. A planning engineer at a telecom retailer remarked, “We thought about trying to do this on our own, but we just didn't have the expertise or the bandwidth.” Employing linear thinking and nonprescriptive approaches often failed to meet expectations, frequently leading to slow project delivery and sometimes even project abandonment.

CO-INNOVATION PARTNER REQUIREMENTS

The interviewees' organizations searched for a co-innovation partner that could:

- Demonstrate strong expertise in digital transformation, unlocked by modernization and achieved with a proven methodology that encourages agility, scalability, and real-time adaptation.
- Guide the transition to a data-driven enterprise and co-create an innovative, derisked strategy to build workflow efficiencies across the organization, reduce the overall footprint, and improve customer experience.
- Automate customer data collection to improve analytics, gain market insights, aggregate accurate representations of retail metrics, better predict customer behavior, grow market share, and improve time to market and general inventory management.

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the five interviewees and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The North American home furnishings retailer provides vertical manufacturing and retail services. It employs 35,000 cross-functional individuals and has a large customer base of 20 million, both online and across 70 retail outlets. With strong brand recognition and a strong online and offline presence, the organization reports annual revenue of \$8 billion and an operating profit margin of 7%.

Engagement characteristics. The composite organization engages IBM on two projects over the

course of three years. The first project's objective is to automate customer data collection and analysis to gain insights and predict customer behavior and demand. The second project aims to automate technology-, security-, and customer-focused workflows across teams.

Key Assumptions

- Home furnishings retail manufacturer
- \$8 billion annual revenue
- 70 outlets in North America
- 35,000 employees
- Customer base of 20 million

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Achieved efficiencies across teams due to automation and derisking strategies	\$2,252,560	\$3,194,564	\$4,505,119	\$9,952,243	\$8,072,680
Btr	Lowered customer acquisition cost due to value orchestration and improved customer data management	\$900,000	\$1,890,000	\$2,976,750	\$5,766,750	\$4,616,642
Ctr	Reduced footprint in infrastructure, lowering capex and opex through application modernization and hybrid cloud optimization	\$267,300	\$534,600	\$1,603,800	\$2,405,700	\$1,889,777
Dtr	Growth in market share due to enhanced analytics and customer insights	\$208,250	\$765,319	\$1,147,979	\$2,121,548	\$1,684,307
	Total benefits (risk-adjusted)	\$3,628,110	\$6,384,483	\$10,233,648	\$20,246,241	\$16,263,406

ACHIEVED EFFICIENCIES ACROSS TEAMS DUE TO AUTOMATION AND DERISKING STRATEGIES

Evidence and data. Due to value orchestration, flexibility, and derisking efforts, cross-functional roles, including customer call agents; developers and data architects; and audit and compliance specialists, gained considerable efficiencies over three years.

- The VP of cloud architecture at the financial services enterprise commented, “Our goal was to reduce the cost of our ongoing operation, increase the ROI, deliver a modern product, improve the customer experience, and bring automation to the manual work we used to do which will drive significant productivity across the organization. And IBM Garage helped us achieve that.”
- Highlighting the efficiencies gained, the marketing leader for the home furnishings retailer stated, “The first benefit we realized due to the speed of automating workflows was the

“We freed up 50 customer-facing associates that were tied up on redundant day-to-day work. Now, because of our partnership with IBM, they’re focusing on different, higher-value marketing efforts.”

Planning engineer, telecom retailer

significant time savings we were seeing from our customer-facing employees.”

Modeling and assumptions. For the financial analysis, Forrester assumes:

- One thousand call center agents earn a fully burdened annual salary of \$54,600 and increase efficiencies by 5% to 10% over three years.

ANALYSIS OF BENEFITS

- Twenty-five developers and data architects earn a fully burdened annual salary of \$162,500 and increase efficiencies by 10% to 20% over three years.
- Twenty-five audit and compliance specialists earn a fully burdened annual salary of \$80,600 and increase efficiencies by 10% to 20% over three years.
- The percentage of time recaptured totals 75%, as not all time gained translates to productive time.
- Productivity levels of cross-functional roles in the legacy environment.
- Salaries, depending on skill level and geographical location.
- Adoption level of co-created solution.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$8.1 million.

Risks. Knowledge efficiencies across teams will vary with:

Achieved Efficiencies Across Teams Due To Automation And Derisking Strategies

Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Customer call agents impacted by IBM Garage workflow automation	Interviews	1,000	1,000	1,000
A2	Percentage of efficiency gained through workflow automation attributed to IBM Garage engagement	Interviews	5%	7%	10%
A3	Fully burdened annual salary of customer call agent	TEI standard	\$54,600	\$54,600	\$54,600
A4	Subtotal: Customer call agent efficiencies gained	$A1 \times A2 \times A3$	\$2,730,000	\$3,822,000	\$5,460,000
A5	Developers and data architects impacted by IBM Garage workflow automation	Interviews	25	25	25
A6	Percentage of efficiency gained through workflow automation attributed to IBM Garage engagement	Interviews	10%	15%	20%
A7	Fully burdened annual salary of developer/data architect	TEI standard	\$162,250	\$162,250	\$162,250
A8	Subtotal: Developer and data architect efficiencies gained	$A5 \times A6 \times A7$	\$405,625	\$608,438	\$811,250
A9	Audit and compliance specialists impacted by IBM Garage workflow automation	Interviews	25	25	25
A10	Percentage of efficiency gained through workflow automation attributed to IBM Garage engagement	Interviews	10%	15%	20%
A11	Fully burdened annual salary of audit and compliance specialist	TEI standard	\$80,600	\$80,600	\$80,600
A12	Subtotal: Audit and compliance efficiencies gained	$A9 \times A10 \times A11$	201,500	302,250	403,000
A13	Productivity capture for all impacted FTEs	TEI standard	75%	75%	75%
At	Achieved efficiencies across teams due to automation and derisking strategies	$(A4 + A8 + A12) \times A13$	\$2,502,845	\$3,549,516	\$5,005,688
	Risk adjustment	↓10%			
Atr	Achieved efficiencies across teams due to automation and derisking strategies (risk-adjusted)		\$2,252,560	\$3,194,564	\$4,505,119
Three-year total: \$9,952,243			Three-year present value: \$8,072,680		

LOWERED CUSTOMER ACQUISITION COST DUE TO VALUE ORCHESTRATION AND IMPROVED CUSTOMER DATA MANAGEMENT

Evidence and data. Interviewees shared that connecting, centralizing, and automating formerly siloed customer data sources enabled accessibility, analysis, and insights, allowing the interviewees' organizations to unify customer profiles, better predict customer demand, create targeted campaigns through segmentation, and lower their cost to acquire new customers.

- The product lead at the home furnishings retail manufacturer shared, "With the help of this digital product, we suddenly had one source of truth regarding market size and what our potential for growth was. ... The most notable change was the ease of gathering and actually applying useful information, rather than struggling even to find it."
- The planning engineer in telecom noted, "We wanted to predict customer demand and anticipate customer behavior. And we couldn't do it internally, so we knew we needed IBM Garage to help us digitize and automate."
- The VP of cloud architecture at the financial services firm reported, "Over the three years of the engagement we have increased the value of

the customer by improving the customer experience, reducing our customer acquisition cost by 5%."

Modeling and assumptions. For the financial analysis, Forrester assumes:

- The organization reports 20 million customers in Year 1 with a customer acquisition rate of 5%.
- The composite organization's previous CAC totals \$100.
- The cost savings per customer acquired equals 1% in Year 1, 2% in Year 2, and 3% in Year 3 with the assumption that growth will continue past Year 3.

Risks. Lowering an organization's customer acquisition cost will vary with:

- The industry.
- The organization's existing CAC.
- The number of customers and the organization's existing customer acquisition rate.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$4.6 million.

Lowered Customer Acquisition Cost Due To Value Orchestration And Improved Customer Data Management					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Existing customers	Interviews	20,000,000	21,000,000	22,050,000
B2	Newly acquired customers	B1*1.05	1,000,000	1,050,000	1,102,500
B3	Previous cost per customer acquired	Interviews	\$100	\$100	\$100
B4	Percentage of cost savings per customer acquired	Interviews	1%	2%	3%
Bt	Lowered customer acquisition cost due to value orchestration and improved customer data management	B2*B3*B4	\$1,000,000	\$2,100,000	\$3,307,500
	Risk adjustment	↓10%			
Btr	Lowered customer acquisition cost due to value orchestration and improved customer data management (risk-adjusted)		\$900,000	\$1,890,000	\$2,976,750
Three-year total: \$5,766,750			Three-year present value: \$4,616,642		

REDUCED FOOTPRINT IN INFRASTRUCTURE, LOWERING CAPEX AND OPEX THROUGH APPLICATION MODERNIZATION AND HYBRID CLOUD OPTIMIZATION

Evidence and data. Due to improved inventory management directly correlated to the ability to better predict customer demand, organizations offloaded dedicated fulfillment space and commissioned existing retail space for fulfillment activities. Additionally, migration to the cloud directly translated to data center opex cost savings and capex avoidance.

- The planning engineer at the large telecom enterprise stated, “The Garage engagement drove a 30% savings across the business, and a lot of it was due to decommissioning data centers.” The interviewee added that they expect to see additional non-infrastructure-related benefits in the future associated with the footprint reduction.
- The marketing leader at the home furnishings retailer mentioned, “As we grow in market share, we don’t need to open up new standalone distribution centers. The opposite. We can utilize our existing store footprint and offload standalone fulfillment space. That does entail some investment to reconfigure the stores to accommodate this new use — fulfillment is more expensive than the traditional cash and carry model, but every retailer knows that is no longer the reality. Which is why this consumer-demand-focused predictive tool is critical and — to us — a game changer.”

Modeling and assumptions. For the financial analysis, Forrester assumes:

- Existing square feet total 1.26 million across all leased and owned real estate.
- The cost of maintaining fulfillment space is \$20 per square foot.

- Previous opex and capex spend totals \$4.5 million per year and includes housing, maintenance, associated internal resources, new equipment investment, asset upgrades, and other capital expense items.
- The existing square footage of fulfillment space and of data center spend is reduced by 1% in Year 1, 2% in Year 2, and 6% in Year 3 due to the consolidation of real estate and the optimization of hybrid cloud infrastructure.

Risks. The footprint reduction due to modernization and hybrid-cloud optimization will vary with:

- The cost per square foot of fulfillment center space, depending on industry, geography, and macroeconomic factors.
- Percentage of leased and owned real estate.
- Previous costs incurred to operate and maintain legacy, on-premises infrastructure.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$1.9 million.

“We are now able to transform and consolidate some of our big stores and turn them into fulfillment centers. So, we’re using commercial square meters to do all the picking, packing, and shipping, all because of this co-created tool.”

Marketing leader, home furnishings retail

Reduced Footprint In Infrastructure, Lowering Capex and Opex Through Application Modernization And Hybrid Cloud Optimization

Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Total existing square footage	Interviews	1,260,000	1,260,000	1,260,000
C2	Percentage of reduction of total square footage due to fulfillment center consolidation	Interviews	1%	2%	6%
C3	Cost per square foot of fulfillment space	Forrester	\$20	\$20	\$20
C4	Subtotal: Fulfillment center consolidation	$C1 \times C2 \times C3$	\$252,000	\$504,000	\$1,512,000
C5	Total opex spend for existing data center housing, maintenance, and internal resources	Composite	\$3,500,000	\$3,500,000	\$3,500,000
C6	Total capex spend for new investments, lifecycle investments, and continuing improvement on assets	Composite	\$1,000,000	\$1,000,000	\$1,000,000
C7	Percentage of reduction of data center costs due to transition to the cloud	Interviews	1%	2%	6%
C8	Subtotal: Data center consolidation	$(C5+C6) \times C7$	\$45,000	\$90,000	\$270,000
Ct	Reduced footprint in infrastructure, lowering capex and opex through application modernization and hybrid cloud optimization	$C4+C8$	\$297,000	\$594,000	\$1,782,000
	Risk adjustment	↓10%			
Ctr	Reduced footprint in infrastructure, lowering capex and opex through application modernization and hybrid cloud optimization (risk-adjusted)		\$267,300	\$534,600	\$1,603,800
Three-year total: \$2,405,700			Three-year present value: \$1,889,777		

GROWTH IN MARKET SHARE DUE TO ENHANCED ANALYTICS AND CUSTOMER INSIGHTS

Evidence and data. Interviewees noted that deploying the new predictive tool and streamlining workflows enabled their organizations to collect, process, and deploy customer data to improve stocking capabilities across outlets according to changing demand and seasonality, resulting directly in market share growth.

- The planning engineer at the telecom retailer commented, “When we started the engagement with Garage, we immediately saw that we needed to be more agile through the use of cutting-edge technology. This new tool created with Garage will safeguard our current market share and give us direction for market expansion, which comes with customer satisfaction.”

- The product lead at the home furnishings retail manufacturer offered, “The primary development we’ve done together has been co-creating a tool to really understand our market potential and the growth opportunities for the company in a competitive environment. ... We can now look forward and forecast actions to take to actually grow our business on category, channel, and market levels. We’re in a very competitive environment and knowing more about our internal strengths and weaknesses puts us on better footing to put a growth plan into action.”

Modeling and assumptions. For the financial analysis, Forrester assumes:

- The value of market subject to IBM Garage impact equals \$3.5 billion and grows by 5% per year.

- The percentage increase in market share due to enhanced analytics and insights is 0.10% in Year 1, 0.35% in Year 2, and 0.50% in Year 3.
- The operating profit margin is 7%.

Risks. Growth in market share can vary with:

- Existing market share and ability to gain share.
- The number of competitors in the market.
- The maturity of the market.

- The operating profit margin, depending on industry and an organization’s business practices and financial health.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of almost \$1.7 million.

Growth In Market Share Due To Enhanced Analytics And Customer Insights

Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Value of total market subject to IBM Garage impact	Interviews	\$3,500,000,000	\$3,675,000,000	\$3,858,750,000
D2	Percentage of improvement specific to IBM Garage	Interviews	0.10%	0.35%	0.50%
D3	Total potential market share increase value due to IBM Garage	D1*D2	\$3,500,000	\$12,862,500	\$19,293,750
D4	Operating profit margin	Industry	7%	7%	7%
Dt	Growth in market share due to enhanced analytics and customer insights	D3*D4	\$245,000	\$900,375	\$1,350,564
	Risk adjustment	↓15%			
Dtr	Growth in market share due to enhanced analytics and customer insights (risk-adjusted)		\$208,250	\$765,319	\$1,147,979
Three-year total: \$2,121,548			Three-year present value: \$1,684,307		

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify:

- **Enhanced employee innovation through collaboration and improved data access.**
Exploring agile ways of working toward problem resolution increases transparency and employee engagement. New AI-enhanced, accessible, and digitized solutions encourage front-end worker collaboration, productivity, and empowerment, leading to higher solution adoption rates, team performance, and overall satisfaction. In addition to engagement, according to the accelerator manager in the energy sector, the concept of trust and “feeling safe” in the work environment can also drive sustainable culture change. The manager noted, “Adoption and employee engagement have been really high from the get-go because we designed the digitized products with the end users — in this case our employees — in mind.”
- **Improved customer experience due to speed, visibility, and collected market insights.**
Applying value orchestration principles allowed the interviewees’ organizations to prioritize and develop bite-size pieces of the more extensive solution within a specific timeframe. This approach allowed for quick pivoting in any phase of a project to reassess, discover, and create an alternative way to realize project goals, thereby never losing sight of the customer.

The marketing leader at the home furnishings retailer remarked, “Before if we were opening a new store in a region, we were looking at data and turnover from the other stores in that region, but now we’re also looking at specific consumer insight data that we’re able to gather because of this new co-created tool. With that, we can learn about income levels, family constellations, education levels, whether they own a car — and

“The digital product is one of the most prioritized products within our organization in terms of how to grow market share. We are even franchising the product now, creating even more revenue.”

Product lead, home furnishings retail manufacturer

that is invaluable when trying to target audiences and meet customer needs.”

- **Increased brand recognition and accessibility.** Using a co-created, automated customer prediction tool helped the interviewees’ organizations target customers better, using segmentation and audience creation features that can directly improve a brand’s accessibility and strength.

The product lead at the home furnishings retail manufacturer reported, “The customer data we needed didn’t really exist. Brand data was never gathered ... anywhere. We had to create a whole new method for capturing brand data assets and put them together in the right way to enable insights and help us better predict customer preferences and behavior.”

The marketing leader at the home furnishings retailer relayed, “What we wanted to achieve is accessibility to the brand. While that’s a continuous journey, the IBM Garage engagement helped us tremendously toward that goal.”

- **Improved latency on customer-facing applications due to modernization and intelligent workflows.** The interviewees’ organizations’ digital transformations to the cloud

enabled automation capabilities, allowing developers to lift and improve old customer-facing apps easily and create entirely new ones focusing solely on the end user. The planning engineer in the telecom industry noted that their organization's mobile app was homegrown, sat on legacy technology, and was slow, which frustrated customers. During the Garage engagement, the cross-functional teams strategized, migrated the mobile app to the cloud, connected siloed data, and improved the app significantly, reporting a 50% improvement in latency.

This improvement in app latency led directly to an increase in revenue. The planning engineer reported, "As a result of the Garage project and the latency reduction, we saw a revenue improvement of about 15% to 20% in-store and 8% to 10% online."

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement IBM Garage and later realize additional uses and business opportunities, including:

- **New revenue stream opportunities.** With the unique opportunity to co-innovate and co-create multiple parallel solutions using the Garage methodology, organizations can package these complementary digital tools into a single package available for sale to other retailers in need of streamlining customer data management. Creating new revenue streams and future business opportunities due to IBM Garage engagements continues to build value beyond a project's original goals.

The product lead at the home furnishings retail manufacturer commented, "These two tools co-created with IBM Garage work well together and were built by this great partnership. And now, a franchisor is looking to buy this packaged digital product, which is a good signal to us. Knowing

another retailer wants to buy it shows just how massive the value truly is, beyond the expected benefits."

- **Geographic expansion opportunities.** With customer audience, segmentation data, and easily accessible insights, interviewees' organizations identified new markets and offered different products at different price points, helping to grow top-line sales and expand global market share. The marketing leader at a global home furnishings retailer noted, "We had only 2% market share in the US and the goal of doubling that in five years. With our new product range tool, we can use existing customer data and market potential and then create the relevant range specific to the US. Based on those results, we decided to focus on sleep — mattress offerings, towels, sheets, etc. — and we're now developing the sleep range offer for the US market."

The accelerator manager at the energy enterprise added, "As a result of our engagement with IBM Garage, we were able to form a new business unit in another region. International operations and corporate services are now established. Marketing and trading are our next initiative in that country."

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Etr	Engagement fees to IBM and cost of transformation-related technologies	\$1,100,000	\$2,200,000	\$2,200,000	\$1,100,000	\$6,600,000	\$5,744,628
Ftr	Internal resources required for engagements	\$396,000	\$792,000	\$792,000	\$396,000	\$2,376,000	\$2,068,066
	Total costs (risk-adjusted)	\$1,496,000	\$2,992,000	\$2,992,000	\$1,496,000	\$8,976,000	\$7,812,694

ENGAGEMENT FEES TO IBM AND COST OF TRANSFORMATION-RELATED TECHNOLOGIES

Evidence and data. Interviewees noted that IBM Garage engagements were flexible with cost and resources scaling up and down relative to the project’s ongoing needs. Interviewees found the cost of IBM Garage acceptable for shorter-term professional services offered by a trusted, global co-innovation partner. They emphasized that reduced risk and strong returns demonstrated the value of a Garage engagement. This resonated because these organizations had explored other approaches and do-it-yourself innovation efforts, which had often ended in failure.

Modeling and assumptions. For the financial analysis, Forrester assumes:

- The engagement fees to IBM Garage scale up between the initial period and Year 1, after which

the composite organization experiences a slight decline with a more significant drop after Year 2.

- As the highlighted benefits rely on migration to the cloud from an on-premises environment, the composite makes a significant investment in cloud technology, approximately 1.75x the engagement fees over three years.

Risks. Fees to IBM will vary based on:

- The number of engagements.
- The length and complexity of engagement(s).
- Legacy infrastructure and solutions.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$5.7 million.

Engagement Fees To IBM And Cost Of Transformation-Related Technologies						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Engagement fees to IBM for services	Interviews	\$400,000	\$800,000	\$700,000	\$300,000
E2	Cloud technology costs	Interviews	\$600,000	\$1,200,000	\$1,300,000	\$700,000
Et	Engagement fees to IBM and cost of transformation-related technologies	E1+E2	\$1,000,000	\$2,000,000	\$2,000,000	\$1,000,000
	Risk adjustment	↑10%				
Etr	Engagement fees to IBM and transformation-related technologies (risk-adjusted)		\$1,100,000	\$2,200,000	\$2,200,000	\$1,100,000
Three-year total: \$6,600,000			Three-year present value: \$5,744,628			

INTERNAL RESOURCES REQUIRED FOR ENGAGEMENTS

Evidence and data. As promoted in the IBM Garage Methodology, co-innovation and co-creation required the dedicated focus of cross-functional employees and leaders.

Modeling and assumptions. For the financial analysis, Forrester assumes:

- Twelve cross-functional FTEs are involved in the two parallel engagements.
- The average annual, fully burdened salary of the cross-functional FTEs is \$150,000.
- Time dedicated to the engagement in a single year equals 40%. The initial period and Year 3 represent six months, so the time dedicated to the engagement during this time is 20%. Years 1 and 2 represent 12 months.

Risks. Initial resources required for engagements will vary with:

- The number of concurrent engagements.
- The skill level of existing team members, as that may impact the percent time dedicated to the engagement.
- The length and complexity of the engagement(s).

“IBM was always securing the right people at the right moment within the development process, and I think that has been one of the biggest contributions.”

Marketing leader, home furnishings retail

- Salary, depending on the title and geographical location.

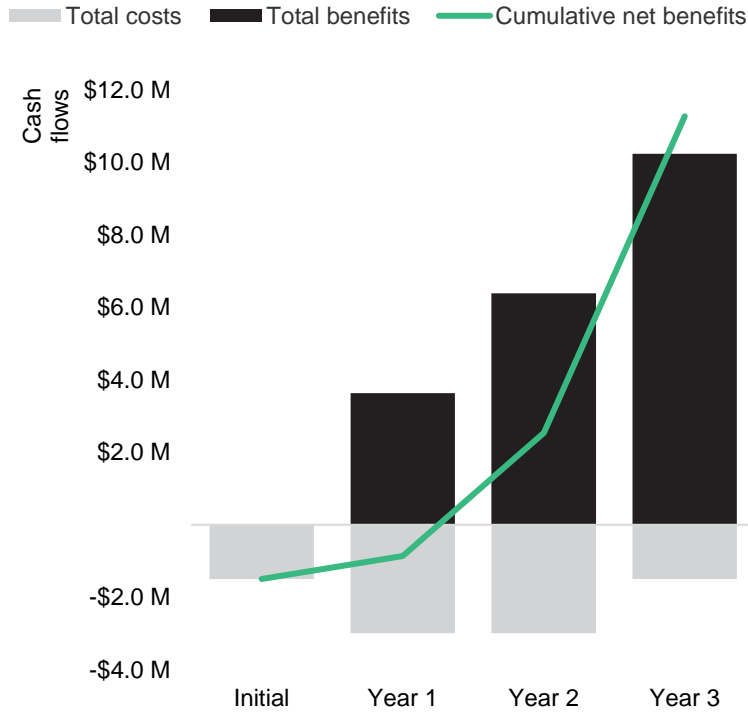
Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$2.1 million.

Internal Resources Required For Engagements						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Cross-organizational FTEs	Interviews	12	12	12	12
F2	Fully burdened annual salary of FTE	TEI standard	\$150,000	\$150,000	\$150,000	\$150,000
F3	Percentage of time committed to engagements	Interviews	20%	40%	40%	20%
Ft	Internal resources required for engagements	$F1 * F2 * F3$	\$360,000	\$720,000	\$720,000	\$360,000
	Risk adjustment	↑10%				
Ftr	Internal resources required for engagements (risk-adjusted)		\$396,000	\$792,000	\$792,000	\$396,000
Three-year total: \$2,376,000			Three-year present value: \$2,068,066			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$1,496,000)	(\$2,992,000)	(\$2,992,000)	(\$1,496,000)	(\$8,976,000)	(\$7,812,694)
Total benefits	\$0	\$3,628,110	\$6,384,483	\$10,233,648	\$20,246,241	\$16,263,406
Net benefits	(\$1,496,000)	\$636,110	\$3,392,483	\$8,737,648	\$11,270,241	\$8,450,712
ROI						108%

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made unless other projects have higher NPVs.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Endnotes

¹ Source: "[Successful Co-Innovation Partnerships Are Built On Common Cause](#)," Forrester Research, Inc., May 18, 2022.

² Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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